IMPROVED SLICER INPUT AND FEEDBACK FILTER CONTENTS FOR BLOCK CODED DIGITAL COMMUNICATIONS

Abstract

[52] Improved decision directed adaptation and decision feedback equalizers are provided in a block coded digital communication system. The performance of a receiver is significantly improved by allowing the decision feedback equalizer to perform time-tracking and residual frequency offset compensation during the data portion of a frame. This is accomplished by capitalizing on the inherent correlation among the chips of a code word in a block coded digital communication system to identify certain instances where more reliable symbol estimates can be derived from a sliced chip without introduction the delay inherent in decoding. As the more reliable symbol estimates are fed back into the chip slicer, the total efficiency of the decision feedback equalizer is improved and the more reliable symbol estimates can be used to replace older content in the feedback filter to further improve the accuracy of the modified slicer input and further decrease the effects of error propagation by the decision feedback equalizer.